

ENGINEERING STANDARDS UPDATE

Because [Standards Know-How Isn't Just for Nerds](#)

Topics this month:

- **Making Our Specs Great Again**
- **Standards and a Slice: IHS Online Standards Seminar Tues April 11**
- **Sustainability Fair—Furniture, LED Lighting, etc. Thurs April 20**
- **Engineering Processes Changes**
- **Training & Qual**
- **LANL Standards Issued in March**
- **O&M Criterion Changes**
- **DOE Technical Standards Inaction**
- **When Good Conduct of Engineering Isn't Followed**

The Standards Homepage (on the LANL public website): <http://engstandards.lanl.gov/>

MAKING OUR SPECS GREAT AGAIN

Depending on who you ask, LANL's 200-odd Master Specs are either far better than available non-LANL templates—or far worse. That kind of generalization is neither accurate nor helpful; the fact is most LANL specs implement the Engineering Standards Manual or otherwise are customized to suit LANL with important POC-level preferences, so they're an integral part of the way LANL does business.

It's also the case that some of the POCs have been so busy supporting projects in recent years that they haven't been keeping the specs up-to-date as well as they might, so some technical and product requirements have become outdated. So while it's written in the ESM that every project's design agency must close those gaps, that's not as efficient or effective as the POCs doing so. And so, by management direction, the Standards Program has undertaken an update campaign this fiscal year. You need only look at all the work done in the last month or two to see this.

Spring cleaning: Along with the revision effort, a few specs have been canceled since late December. That's because the effort to update and maintain them was not justified as they lacked a lot of LANL specifics, so commercial masters (such as in our MasterSpec subscription) were deemed acceptable. Those canceled so far are listed later in this email below all the revisions (and a couple of new specs).

So it's all good, but if you get a somewhat shorter response from a POC, Christina, or me toward the end of a monthly deadline, just know that we're up to our aspirins working on improving the masters.

SPRING CLEANING

ARCHITEXTS



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STANDARDS AND A SLICE: IHS ONLINE STANDARDS SEMINAR TUES APRIL 11

Oppenheimer Study Center (Research Library) San Ildefonso Room (TA-3, Building 207, 2nd floor), 11am-1pm.

From Kelly Durkin Ruth:

New to the Lab and need an introduction to finding national codes and standards? Or have you been here a while and want to refresh your standards searching skills?

The Research Library is hosting its annual IHS Standards training and pizza lunch.

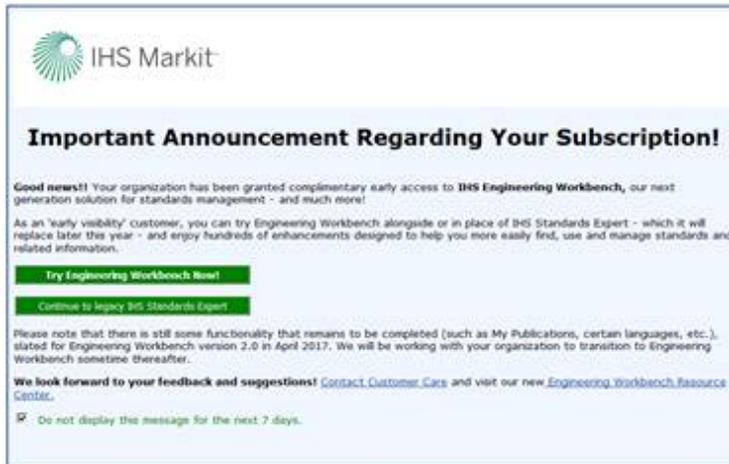
An IHS trainer will provide an overview of searching the IHS standards platform and cover enhancements, tips to improve your searching and more.

RSVP not required, but for planning purposes please email Kelly Durkin Ruth, durkin@lanl.gov, if you plan to attend.

IHS Standards Expert

IHS Standards Expert is an [online system](#) for standards management providing LANL staff access to standards from organizations like ANSI, ASTM, ASME, and more. It offers notifications of standards activities and supports creating and sharing lists of frequently used standards. Learn how to make effective use of this resource through this training opportunity.

You may have seen the splash page below when accessing IHS recently. We already have access to both Standards Expert and the new Engineering Workbench platform, which will replace Standards Expert at the end of this year/early next year.



IHS Markit

Important Announcement Regarding Your Subscription!

Good news! Your organization has been granted complimentary early access to **IHS Engineering Workbench**, our next generation solution for standards management - and much more!

As an 'early visibility' customer, you can try Engineering Workbench alongside or in place of IHS Standards Expert - which it will replace later this year - and enjoy hundreds of enhancements designed to help you more easily find, use and manage standards and related information.

[Try Engineering Workbench Now!](#)

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Please note that there is still some functionality that remains to be completed (such as My Publications, certain languages, etc.), slated for Engineering Workbench version 2.0 in April 2017. We will be working with your organization to transition to Engineering Workbench sometime thereafter.

We look forward to your feedback and suggestions! [Contact Customer Care](#) and visit our new [Engineering Workbench Resource Center](#).

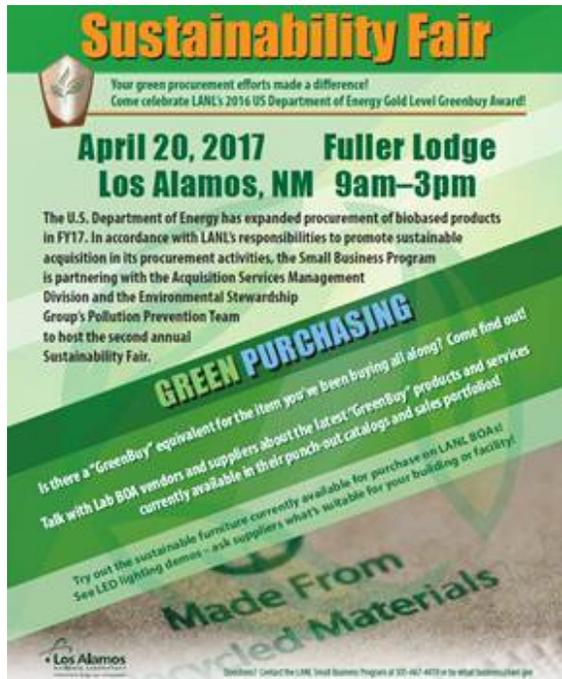
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SUSTAINABILITY FAIR—FURNITURE, LED LIGHTING, ETC. THURS APRIL 20

Per Maryrose Montalvo with LANL's Pollution Prevention (P2) Team, the fair, which is part of LANL's Earth Day events, will feature products and services from vendors and suppliers who have an existing Blanket Order Agreement (BOA) in place with the Lab. While a variety of green products are promoted, this year's focus is on sustainable furniture and LED lighting.

If you side with the 97% of scientists that believe in anthropogenic global warming, then sustainability is great, of course, and mandated by ESM Chapter 14 Sustainable Design as well as other requirements throughout the ESM and LANL Master Specs (as noted last month). Lighting procurement is controlled by Sections 26 5100 Interior Lighting and 26 5600 Exterior Lighting. Furniture procurement is controlled by the procurement documents for the BOAs and is supplied to projects as Government Furnished Equipment (GFE)--no longer provided by construction subcontractors for almost 10 years now.

Using "etc." is lousy when specifying, so it's nice to have a chance to use it in the headline above.



ENGINEERING PROCESSES CHANGES

The following Administrative Procedure has been revised and posted on the [SharePoint site](#).

AP-341-602-R2	Requirements and Criteria Document (Course 44258 for those assigned to this AP)	Issued: 03/24/17
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For questions about CoE processes, please contact [Jeff Fauble](#) (5-0595).

TRAINING & QUAL

For the last time:

Geometric Dimensioning and Tolerancing Classes (GD&T) and Print Reading Workshops (Non-LANL)

The Northern New Mexico ASME Section offers GD&T and print-reading classes geared to the mechanical R&D and weapons work done at LANL (not so much facility work). Courses cost close to \$1000 each. Upcoming:

[Print Reading and Engineering Drawing Practices](#) April 17-18, Monday-Tuesday, from 7:30 to 4:30PM, in Room 203B at the Research Park.

[GeoTol Pro Fundamentals Using ASME Y14.5-2009 Standard](#) April 19-20, all day Wednesday and Thursday, same hours and room as above.

For the first time (this Spring):

Pressure Safety Officer Training in May

Two courses are being offered; if interested, contact ESM Ch 17 POC [Ari \(Ben\) Swartz](#):

PSO Overview – Pressure safety concepts needed to perform the roles and responsibilities of being a PSO in an interim capacity.

ASME B31.3 – Will familiarize participants with ASME B31.3 Process Piping code as related to the duties of a PSO.

All will be at TA00-0199 Canyon Complex Rm 169, 8am – 5 pm.

Date	Class Title, Number	Slots Available
5/2/17 Tues	PSO Overview, 52955	Full
5/9/17 Tues	ASME B31.3 Process Piping Class, 56240	Full
5/16/17 Tues	PSO Overview, 52955	2-3
5/23/17 Tues	ASME B31.3 Process Piping Class, 56240	2-3

LANL STANDARDS ISSUED IN MARCH

ESM STD-342-100	
Chapter 17 Pressure Safety, ADMIN-2 Design, Documentation and Records	Posted VAR-10128 , Acceptance of Engineered Piping Supports

Master Specifications STD-342-200	
01 4115 R0 Pressure Safety Submittals NEW NEW NEW	Initial issue. Thanks to A. Ben Swartz and POC Michael Ladach.
For these, thanks to POC Scott Richardson and, for the sustainability input, Mackenzie Mathews, student in the UI Site Sustainability Program:	
01 8113.13 R0 Sustainable Design	New standard spec section to capture SD goals of a project when ESM Chapter 14 applies.
07 4113 R4 Metal Roof Panels	Updated all references, general editing/formatting.
07 5050 R3 Membrane Roofing General Provisions	Updated all references; incorporating the roofing SME's input; and general editing/formatting
07 5213.13 R1 Atatic-Polypropylene Modified-Bitumen Roofing, Cold-Applied	Updated all references; inclusion of RAMP roofing program recommendations and lessons learned; and general editing/formatting
07 5217 R1 SBS Modified Bitumen Roofing, Cold Applied	Updated all references; inclusion of RAMP roofing program recommendations and lessons learned; and general editing/formatting
08 5113 R3 Aluminum Windows	Updated all references; enhancement of sustainability aspects; and general editing/formatting.
08 8000 R3 Glazing	Updated all references; enhancement of sustainability aspects; and general editing/formatting
09 2116 R4 Gypsum Board Systems	Revisions include adding clarification concerning light gauge metal framing versus structural steel framing; updated all references; and general editing/formatting

09 5100 R3 Acoustical Ceilings	Updated all references; enhancement of structural requirements to IBC2015; and general editing/formatting
09 6813 R2 Tile Carpeting	Updated all references; enhancement of sustainability aspects; and general editing/formatting
09 6816 R2 Sheet Carpeting	Updated all references; enhancement of sustainability aspects; and general editing/formatting
09 6900 R3 Access Flooring	Updated all references; enhancement of structural requirements to IBC2015; and general editing/formatting
09 9100 R4 Painting	Updated all references; enhancement of sustainability aspects; and general editing/formatting
10 1405 R3 Exterior Signage	Updated all references; general editing/formatting
For this one, thanks to Patrick Rowe, POC Stacey Talachy, and others (revised at the end of January but missed noting it then):	
11 5311.16 R2 Glovebox Feedthroughs, Hermetically Sealed	Aligned requirements to match vendor practices and current requirements. Changes include Section 1.4, Submittals to include test reports; Section 3, Execution, updated codes and standards to current; and reduced tests and requirements to those necessary for safety basis crediting (vacuum leak test) and overall functionality (high potential test).
For this one, thanks to A. Ben Swartz and POC Michael Ladach:	
23 2113 R5 Hydronic Piping	Updated to reflect requirements of ESM Chapter 17, Pressure Safety
For these, thanks to POC Eric Stromberg and, for the seismic content, Glen Pappas.	
26 0526 R2 Grounding and Bonding for Electrical Systems	Editorial changes, removed existing work requirements, clarified connection requirements, clarified when ground rods are needed, added New Mexico requirements for ground rods, clarified concrete encased electrode requirements, removed supplemental electrodes, changed bonding location from first disconnect to transformer, removed resistance requirements
26 0536 R3 Cable Trays for Electrical Systems	Removed fire stop portions. Added new seismic requirements. Removed general listing requirements. Added class descriptions. Removed resistance requirements (of splice plates). Removed requirement for label to not use as a walkway. Modified requirements for existing work. Added specifics for installing expansion plates and where to place splice plates
26 0548.16 R0 Seismic Controls for Electrical Systems NEW NEW	Initial issue. Supersedes 26 0548, <i>Vibration and Seismic Controls for Electrical Systems</i> . POC: Glen Pappas/Eric Stromberg.
26 2413 R4 Switchboards	Editorial changes. Included new requirements for seismic. Removed receipt inspection. Removed warranty requirement. Removed requirement to be built in ISO 9001 facility. Removed specific scheduling requirements. Added requirement for main to be in separate compartment.

	Clarified that all, 480 volt, breakers need to be rated for 600 volts. Removed requirement for NEMA AB3 (wrong requirement). Modified requirements for existing systems.
26 2416 R3 Panelboards	Removed isolated ground panelboards for computer loads. Included new requirements for seismic. Increased use of load center from 100 to 225 amps. Removed requirement that supplier is ISO 9001 certified. Removed requirement for receipt inspections. Indicated that all breakers, for 480 volt systems, need to be 600 volt rated. Removed restriction for tandem breakers. Modified requirements for existing installations. Removed requirement for load balancing. Editorial changes.

Deleted Specs:

07 5216 r2 Styrene-Butadiene-Styrene Modified Bituminous Membrane Roofing	Canceled and archived 3/16/2017. This section is for a multi-ply membrane roof system that is hot asphalt mopped, which LANL no longer uses. Sections remain for suitable "cold applied adhesive" alternatives for both APP and SBS modified bitumen membrane roofing.
07 7233 r2 Roof Hatches 07 7600 r2 Roof Pavers 08 3100 r2 Access Doors and Panels 09 2116 r4 Gypsum Board Systems 12 2113 r1 Horizontal Louver Blinds 14 2413 r1 Hydraulic Freight Elevators 14 2423 r1 Hydraulic Passenger Elevators	Canceled and archived 12/21/2016. The effort to maintain was not justified since they lacked a lot of LANL specifics or implemented the ESM, so commercial masters were deemed acceptable.
23 6509 r1 Induced-Draft Cooling Towers—Steel 23 6511 r1 Induced-Draft Cooling Towers--Fiberglass	Canceled and archived 12/21/2016. The effort to maintain was not justified since they lacked a lot of LANL specifics or implemented the ESM, so commercial masters were deemed acceptable.
26 0548 r3 Vibration and Seismic Controls for Electrical Systems	Canceled and archived 3/30/2016. Superseded by 26 0548.16, Seismic Controls for Electrical Systems.

O&M CRITERION CHANGES

Below are recent [O&M Criterion](#) and related Preventative Maintenance Instruction (PMI) changes issued by MSS-MP, the Maintenance Programs Group of Maintenance and Site Services Division. Implementation is required 30 days from issue date for non-nuclear facilities, 60 days for nuclear facilities.

It's best to use Internet Explorer to access them on the SharePoint site to avoid authentication issues (that includes you, Mr. H.).

O&M 403 R8: Boilers	Added requirements to perform in service inspection, repairs and alterations under LANL owner-user and “R” Stamp certificate of authorization by LANL Commissioned Inspectors. Minor edits. http://pmd-shpt-prod:6129/DocumentLibrary/MSS/onm/403.pdf#openinnewwindow
PMI 403-A R6: Low- and High-Pressure Steam Boiler and Low-Temperature Water Heating Boiler Inspection, Testing, and Maintenance	Added Step 2.12 to 403-A.005, added Step 2.4 to 403-A.006, added Step 2.10 to 403-A.011, and added Step 2.3.9 to 403-A.012. Minor edits. http://pmd-shpt-prod:6129/DocumentLibrary/MSS/workinstructions/403-AWD.pdf
PMI 411-A R0: Air Compressor Equipment Maintenance and Repair	Administrative change: changed Step 4.4 in 411-A.003 to refer to Step 4.5, not Step 2.5. Also removed calibrated tools from lists of tools in Forms 411-A.001, 411-A.002, 411-A.003, 411-A.004, 411-A.009, and 411-A.010. You can access PMI 411-A R0 (Administrative Change) by clicking on the below link: http://pmd-shpt-prod:6129/DocumentLibrary/MSS/workinstructions/411-AWD.pdf
PMI 721-B R2.1: Wet Automatic Sprinkler Systems Quarterly Inspection and Testing for Nuclear, High-Hazard Non-Nuclear, and High-Value Facilities	Minor change: Added Steps 4.11–4.17 to Section 5.0 as Steps 5.7–5.13. Deleted Steps 4.14–4.17, because those actions can’t occur before post-maintenance testing. http://pmd-shpt-prod:6129/DocumentLibrary/MSS/workinstructions/721.BWD.pdf
PMI 725-C R0: Open Head Deluge Automatic Sprinkler Systems Monthly Inspection and Testing	Administrative change: edited Step 2.12 to read: “IF the answer to 2.11 above is N ...” instead of “IF the answer to 2.11 above is Y ...” http://pmd-shpt-prod:6129/DocumentLibrary/MSS/workinstructions/725-CWD.pdf

DOE TECHNICAL STANDARDS INACTION

DOE Tech [Stds](#) activity (beta [here](#)) in the past month: None, for the third month in a row. HQ sources say every new administration issues a moratorium on new requirements for a while, and there’s no reason to be alarmed.

WHEN GOOD CONDUCT OF ENGINEERING ISN’T FOLLOWED

No horror stories this month, only a rundown of some examples of apparently good engineering. No word on which met cost targets. You know the saying: cost, schedule, and quality—pick two (and engineering and QA usually champion the last one).

[The World's 25 Most Impressive Megaprojects](#) (Popular Mechanics)

LAST MONTH'S UPDATE TOPICS

Miss an issue? The archive is at "Monthly Update" on the Standards homepage. Last month's topics:

- **Training & Qual**
- **LANL Standards Issued in March**
- **O&M Criterion Changes**
- **I-Code Errata**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

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